

D_{2d}^7
 $P\bar{4}b2$

No. 117

 $P\bar{4}b2$
Generators selected (1); $t(1,0,0)$; $t(0,1,0)$; $t(0,0,1)$; (2); (3); (5)

General position

 Multiplicity,
Wyckoff letter,
Site symmetry

Coordinates

8	<i>i</i>	1				
			(1) x, y, z	(2) \bar{x}, \bar{y}, z	(3) y, \bar{x}, \bar{z}	(4) \bar{y}, x, \bar{z}
			(5) $x + \frac{1}{2}, \bar{y} + \frac{1}{2}, z$	(6) $\bar{x} + \frac{1}{2}, y + \frac{1}{2}, z$	(7) $y + \frac{1}{2}, x + \frac{1}{2}, \bar{z}$	(8) $\bar{y} + \frac{1}{2}, \bar{x} + \frac{1}{2}, \bar{z}$

I Maximal translationengleiche subgroups

[2] $P\bar{4}11$ (81, $P\bar{4}$)	1; 2; 3; 4		
[2] $P2b1$ (32, $Pba2$)	1; 2; 5; 6		
[2] $P212$ (21, $C222$)	1; 2; 7; 8	$\mathbf{a} - \mathbf{b}, \mathbf{a} + \mathbf{b}, \mathbf{c}$	$0, 1/2, 0$

II Maximal klassengleiche subgroups

• Enlarged unit cell

[2] $\mathbf{c}' = 2\mathbf{c}$			
$P\bar{4}n2$ (118)	$\langle 2; 3; 5 + (0, 0, 1) \rangle$	$\mathbf{a}, \mathbf{b}, 2\mathbf{c}$	
$P\bar{4}n2$ (118)	$\langle 2; (3; 5) + (0, 0, 1) \rangle$	$\mathbf{a}, \mathbf{b}, 2\mathbf{c}$	$0, 0, 1/2$
$P\bar{4}b2$ (117)	$\langle 2; 3; 5 \rangle$	$\mathbf{a}, \mathbf{b}, 2\mathbf{c}$	
$P\bar{4}b2$ (117)	$\langle 2; 5; 3 + (0, 0, 1) \rangle$	$\mathbf{a}, \mathbf{b}, 2\mathbf{c}$	$0, 0, 1/2$
[3] $\mathbf{c}' = 3\mathbf{c}$			
$P\bar{4}b2$ (117)	$\langle 2; 3; 5 \rangle$	$\mathbf{a}, \mathbf{b}, 3\mathbf{c}$	
$P\bar{4}b2$ (117)	$\langle 2; 5; 3 + (0, 0, 2) \rangle$	$\mathbf{a}, \mathbf{b}, 3\mathbf{c}$	$0, 0, 1$
$P\bar{4}b2$ (117)	$\langle 2; 5; 3 + (0, 0, 4) \rangle$	$\mathbf{a}, \mathbf{b}, 3\mathbf{c}$	$0, 0, 2$

• Series of maximal isomorphic subgroups

[p] $\mathbf{c}' = p\mathbf{c}$			
$P\bar{4}b2$ (117)	$\langle 2; 5; 3 + (0, 0, 2u) \rangle$ $p > 2; 0 \leq u < p$ p conjugate subgroups for the prime p	$\mathbf{a}, \mathbf{b}, p\mathbf{c}$	$0, 0, u$
[p^2] $\mathbf{a}' = p\mathbf{a}, \mathbf{b}' = p\mathbf{b}$			
$P\bar{4}b2$ (117)	$\langle 2 + (2u, 2v, 0); 3 + (u - v, u + v, 0); 5 + (\frac{p}{2} - \frac{1}{2}, \frac{p}{2} - \frac{1}{2} + 2v, 0) \rangle$ $p > 2; 0 \leq u < p; 0 \leq v < p$ p^2 conjugate subgroups for the prime p	$p\mathbf{a}, p\mathbf{b}, \mathbf{c}$	$u, v, 0$

I Minimal translationengleiche supergroups

 [2] $P4/nbm$ (125); [2] $P4/mbm$ (127); [2] $P4_2/nbc$ (133); [2] $P4_2/mbc$ (135)

II Minimal non-isomorphic klassengleiche supergroups

• Additional centring translations

 [2] $C\bar{4}m2$ (111, $P\bar{4}2m$); [2] $I\bar{4}c2$ (120)

• Decreased unit cell

none